UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
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October 10, 2008

Colonel John E. Pulliam, Jr.
District Engineer
Wilmington District, U. S. Army Corps of Engineers
Post Office Box 1890
Wilmington, NC 28402

SUBJECT: Topsail Beach Interim Beach Fill Project, North Carolina – Draft Supplemental Environmental Impact Statement
CEQ # 20080330, ERP # COE-E11060-NC

Dear Colonel Pulliam:

Pursuant to Section 309 of the Clean Air Act (CAA) and Section 102(2)(C) of the National Environmental Policy Act (NEPA), the U.S. Environmental Protection Agency (EPA) Region 4 has reviewed the Draft Supplemental Environmental Impact Statement (Draft EIS) issued by the U.S. Army Corps of Engineers (Corps) for the subject project. Under Section 309 of the CAA, EPA is responsible for reviewing and commenting on major federal actions significantly affecting the quality of the human environment.

Topsail Beach is a town located at the southern end of Topsail Island, a 22-mile long barrier island along the coast of Pender County, North Carolina. The Town has proposed a beach nourishment project to the Corps that would place up to 975,000 cubic yards of sand onto the beach, with the sand to be dredged from an offshore borrow area within State jurisdictional waters less than 3 miles from the shoreline. The Town's preferred interim action would address a 4.7 mile section of severely eroded beachfront as an interim measure until the entire Alternative 3 of the proposed 11.1 mile shoreline federal project. This interim action requires a Section 10/404 permit from the Corps and is being considered as a stop gap measure until the federal shoreline restoration project, now scheduled to be done in 2012.

Alternatives

An economic analysis is presented in the DEIS for three basic alternatives: no structural actions; relocation and/or demolition of structures in potential jeopardy; and performing a limited beach filling action on the 4.7 mile segment of the beachfront. The non-structural alternative states an assumption for defining when substantial damage would occur: the loss of 2 feet of sand at the front of the beachfront structure foundations at pre-storm MHW. There are 61 structures affected in this analysis, and the sand loss is equated to structures receiving 20% damage. The analysis of this alternative has no costs to conduct the action except routine sand pushing which occurs annually for all

alternatives. The model yielded a total average annual damage of $13,767,000. Analysis of the second alternative, relocation/demolition of structures, assumes the same criterion as the non-structural alternative with all 61 structures being demolished. The average annual cost to do the actions, including the damage losses was determined to be $16,707,000. EPA's previous comment on the West Onslow Island DEIS also is relevant here, that the values of beachfront development are extremely high given the present jeopardy to the existing structures and storm-prone vacant lots. This analysis therefore should be checked to ensure that property values reflect present real estate value. To improve reviewer's understanding, additional text in the final EIS should explain and provide the numeric risk probability of occurrence of the beach erosion criterion over time.

Alternative borrow areas include those under consideration for the future federal project. One very important consideration is whether this interim action would preclude any other alternative actions at a later time that could be more environmentally sound and cost-effective. It is stated in a January 23, 2007, comment letter from Dr. Robert Taylor that local funds being set aside for the local matching share on the future federal project are to be used for this interim project. This commenter is making the point that this utilization of local funds jeopardizes the federal project. Also, we believe that it is important for the local sponsor to ensure that sufficient funds will be available for planned maintenance of the beach after the beach restoration occurs. Further, there should be a determination by the Corps about whether the utilization of the beach-compatible sand of the proposed borrow site would have substantial environmental or economic impact on the future federal project.

Environmental Consequences

Environmental impacts associated with this project that should receive most attention are: borrow sand compatibility with the requirements for shorebird and sea turtle nesting requirements, recolonization of near-shore bottom habitat, avoidance of hard bottom habitat further offshore and beach fill slopes or ledges impeding turtle nesting. All of these concerns are likely to be commented upon in detail by Federal and State wildlife resource agencies.

One of the potential effects of coastal dredging in and around inlets between barrier islands is the rate of accretion or erosion at the ends of adjoining islands. Section 5.2 discusses an evaluation done of the potential for the project to alter inlet and barrier island geomorphology. The DEIS states that the inlet has a "persistent southward migration" meaning Topsail Island is accreting on its southwest end while Lea/Hutaff Island, southwest of New Topsail Inlet, is eroding. It is important for the Corps to consider detrimental effects to Lea/Hutaff Island even though it is not the site of the beach restoration. Because this island is undeveloped, it has potentially greater value to wildlife, and therefore steps should be taken to minimize adverse effects there. This could be important because the preferred sand borrow site is just seaward of the inlet.

Running the Delft3D model predicts what would be the sand infill rates in the borrow cuts subsequent to the dredging. Equally important to consider is the origin of the migrating infill material. There is no mention of what is the proposed depth and configuration of the dredging cuts. Data show that the post-dredging borrow cuts would capture mostly sediment moving along the shore, but is this sand from the sediment transport in and out of the inlet or erosion of the barrier island sand? Based on the analysis of sediment transport (Section 5.2) utilizing the more seaward cuts of Borrow Area X would take sand from outside the predominant zone of sediment long-shore movement thus avoiding interruption of the fairly balanced sand movement in both directions over time. Therefore, the wiser plan perhaps would be to use only the most seaward portion of Borrow Area X. While there is conflicting sampling data with regard to the particle size of Alternative Borrow Area A, this more seaward borrow area would be preferable except for its unsuitably high percentage of silt content and small sand particle size.

Shoreline impacts were also predicted by the use of the Delft3D model. The focus and the conclusions from this analysis, shown in Figures 46-50, are on the sections of the ends of the adjacent islands seaward of the throat of New Topsail Inlet. While there is little impact predicted to these end sections, there is no mention of the erosion that occurs to the segment of Lea/Hutaff inshore of the inlet throat. Attention should be directed to this segment for possible mitigation of this erosion especially since it is noted that a cumulative net loss of 5.8 acres of dune habitat on Lea/Hutaff Island would occur at its northern end (Table 28). Being uninhabited, this end of the island is likely highly utilized as shorebird nesting and foraging habitat.

In regard to the concern about intertidal and subtidal benthic recolonization, the DEIS cumulative impacts analysis greatly minimizes the long-term impacts to invertebrate populations. These populations have strong regenerative capacities and none are considered threatened with extinction. Nevertheless, beach fill projects create unnatural sediment movement and smothering of sand bottoms. The Town's interim project is defined as a one-time action, but it is possible that additional interim filling actions could be requested. The federal project will encompass the interim project and result in large disruption to the benthic community, and continual repetitive annual maintenance actions are envisioned for that project. Natural storm events also result in substantial community losses. Some of these infaunal species require a year to recolonize to normal densities.

In summary, EPA has identified the need for additional clarification of the degree of risk of beach erosion, and the assumptions of beachfront real estate values used in the economic impact analysis. EPA has rated the document EC-2 meaning that we have environmental concerns with the location of the proposed borrow sites and request additional information to fully address the concerns and define the project impacts. EPA is requesting that the Corps consider limiting the potential borrow locations to the seaward portions of Borrow Area X to avoid the zone of greatest long-shore sand transport. The final EIS should address the potential ways to avoid and minimize identified adverse impacts.

Thank you for the opportunity to review the DEIS. Please contact Ted Bisterfeld of my staff at 404/562-9621 or email bisterfeld.ted@epa.gov or me if you wish to discuss EPA's comments.

Sincerely,

Heinz J. Mueller, Chief
NEPA Program Office

Enclosure: EIS Rating System Criteria

cc: Miles Croom, NMFS St. Petersburg
Pete Benjamin, USFWS Raleigh Office

ENCLOSURE

U.S. ENVIRONMENTAL PROTECTION AGENCY
ENVIRONMENTAL IMPACT STATEMENT (EIS) RATING SYSTEM CRITERIA

EPA has developed a set of criteria for rating Draft EISs. The rating system provides a basis upon which EPA makes recommendations to the lead agency for improving the draft.

RATING THE ENVIRONMENTAL IMPACT OF THE ACTION

LO (Lack of Objections): The review has not identified any potential environmental impacts requiring substantive changes to the preferred alternative. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposed action.

EC (Environmental Concerns): The review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact.

EO (Environmental Objections): The review has identified significant environmental impacts that should be avoided in order to adequately protect the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). The basis for environmental objections can include situations:

1. Where an action might violate or be inconsistent with achievement or maintenance of a national environmental standard;
2. Where the Federal agency violates its own substantive environmental requirements that relate to EPA's areas of jurisdiction
or expertise;
3. Where there is a violation of an EPA policy declaration;
4. Where there are no applicable standards or where applicable standards will not be violated but there is potential for significant environmental degradation that could be corrected by project modification or other feasible alternatives; or
5. Where proceeding with the proposed action would set a precedent for future actions that collectively could result in significant environmental impacts.

EU (Environmentally Unsatisfactory): The review has identified adverse environmental impacts that are of sufficient magnitude that EPA believes the proposed action must not proceed as proposed. The basis for an environmentally unsatisfactory determination consists of identification of environmentally objectionable impacts as defined above and one or more of the following conditions:

1. The potential violation of or inconsistency with a national environmental standard is substantive and/or will occur on along-term basis;
2. There are no applicable standards but the severity, duration, or geographical scope of the impacts associated with the proposed action warrant special attention; or
3. The potential environmental impacts resulting from the proposed action are of national importance because of the threat to national environmental resources or to environmental policies.

RATING THE ADEQUACY OF THE ENVIRONMENTAL IMPACT STATEMENT (EIS)

1 (Adequate): The Draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

2 (Insufficient Information): The Draft EIS does not contain sufficient information to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the Draft EIS, which could reduce the environmental impacts of the proposal. The identified additional information, data, analyses, or discussion should be included in the Final EIS.

3 (Inadequate): The Draft EIS does not adequately assess the potentially significant environmental impacts of the proposal, or the reviewer has identified new, reasonably available, alternatives, that are outside of the spectrum of alternatives analyzed in the Draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. The identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. This rating indicates EPA's belief that the Draft EIS does not meet the purposes of NEPA and/or the Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised Draft EIS.